Claims

1. Polyaddition compounds containing uretdione groups, obtainable by reacting uretdione polyisocyanates formed from diisocyanates having exclusively secondary- and/or tertiary-attached isocyanate groups with a molar fraction of isocyanurate structures, based on the sum of uretdione groups and isocyanurate groups, of not more than 10%, with compounds reactive towards isocyanates.

2. Process for preparing polyaddition compounds according to Claim 1, in which

A) uretdione polyisocyanates formed by diisocyanates having exclusively secondary- and/or tertiary-attached isocyanate groups, with a molar fraction of isocyanurate structures, based on the sum of uretdione groups and isocyanurate groups, of not more than 10%, together where appropriate with the use of

B) further diisocyanates and/or polyisocyanates in an amount of up to 70% by weight, based on the total weight of components A) and B), are reacted with

C) polyols of the molecular weight range from 62 to 2 000 and optionally

D) further isocyanate-reactive monofunctional compounds in an amount of up to 40% by weight, based on the total weight of components C) and D),

while observing an equivalents ratio of isocyanate groups to isocyanate-reactive groups of from 1.8:1 to 0.6:1.

3. Use of polyaddition compounds according to Claim 1 as starting components in the preparation of polyurethane plastics.

4. Use of polyaddition compounds according to Claim 1 as starting components in the preparation of mouldings and shaped parts.

5. Use of polyaddition compounds according to Claim 1 as starting components in the preparation of coating materials and coatings.

6. Polyurethane plastics obtainable by reacting the polyaddition compounds according to Claim 1 with compounds containing isocyanate-reactive groups.

7. Powder coating formulations comprising polyaddition compounds according to Claim 1.

8. Method of coating substrates, characterized in that a substrate is first coated with a powder coating formulation according to Claim 6 and is then subjected to a heat treatment and/or to treatment with actinic light, in the course of which a coherent coating film forms on the substrate from the powder coating formulation.